# The Knowledge Management in Algerian enterprises: An overview through the knowledge process practices.

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**Abstract:**

Numerous researches about knowledge management have been realized in the field for the purpose of studying the different topic and to examine various relationships between variables.

This paper aims to describe the whole situation of the knowledge management implementation and integration in the Algerian enterprises. The researchers study the knowledge process practices and their importance from the point of view of the Algerian managers. A set of data were collected using a questionnaire from 34 Algerian enterprises.

As a result, the findings show that enterprise leaders are interesting and ready to integrate and to improve knowledge management, especially in big enterprises. Besides, the knowledge development process needs more enhancements.

**Keywords:** Knowledge management, knowledge process, Innovation, Algerian enterprises.

**JEL Codes :** D80, D83, O30.

## Introduction:

The extreme changes of the enterprise environment impose on managers to coordinate more effectively between the different circumstances in the global and local fields to survive and resist the competitive threats. The ability of any enterprise to transform these threats into real opportunities make it a strong competitor and secures its market share, at least in the medium term locally.

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To face the environment's complexity, the managers focus mainly on information management as a key tool to master any situation. For the purpose to make this information more valuable in the management system, a knowledge management system must be put in place in order to transform the information into knowledge in a predetermined context.

Furthermore, the knowledge, the ICT (information and communication technologies) (Mallet, 2006), and innovation can consider as a strategic tool to achieve the competitive advantage (Bergeron, 2003) and to improve the performance (Abubakar et al., 2019; Ermine, 2014; Hosseini, Akhavan, 2019; Houhou, Lachachi, 2018; Lachachi, 2014; Lachachi, Houhou, Zeghoudi, 2015; Moosavi, et al., 2017; Zack et al., 2009).

Knowledge management (KM) and organizational innovation procedures are integral parts of the progress and survival of the organizations (Abbas et al., 2020). Likewise, KM practices have a significant and positive influence on firm innovation (Ode, Ayavoo, 2020). At this stage, both the innovation process and knowledge management systems (KMS) should be integrated in the firm.

A number of enterprises and structural elements have the power to influence KM in enterprises by tree elements according to Samiei and Habibi, 2019. It concerns sound enterprise culture, view of knowledge management as a business strategy, commitment.

On the other hand, many researches about KM are conducted in Algeria and various perspectives have been defined about the topic.

According to Datoussaid (2015), KM in the Algerian industries is a mixture of strategies, tools, and techniques strategy that is based on innovation and accumulation of tacit knowledge. This mixture can be considered as a new growth regime to increase the income of economic agents beyond the oil revenues.

Besides, and based on the study of Hartani (2016), the majority of enterprise leaders claim that KM can help to create value, but their process practices require more improvement.

Lachachi (2014) studied a KM model based on the process of knowledge management, personal and organizational factors, and ICT to help the enterprise to acquire a competitive advantage.

Another research by Benabderrahmane (2012) was conducted to examine a new approach for the enterprise's management in Algeria based on KM integration, human resource management and ICT deployment in order to study the influence on the performance improvement.

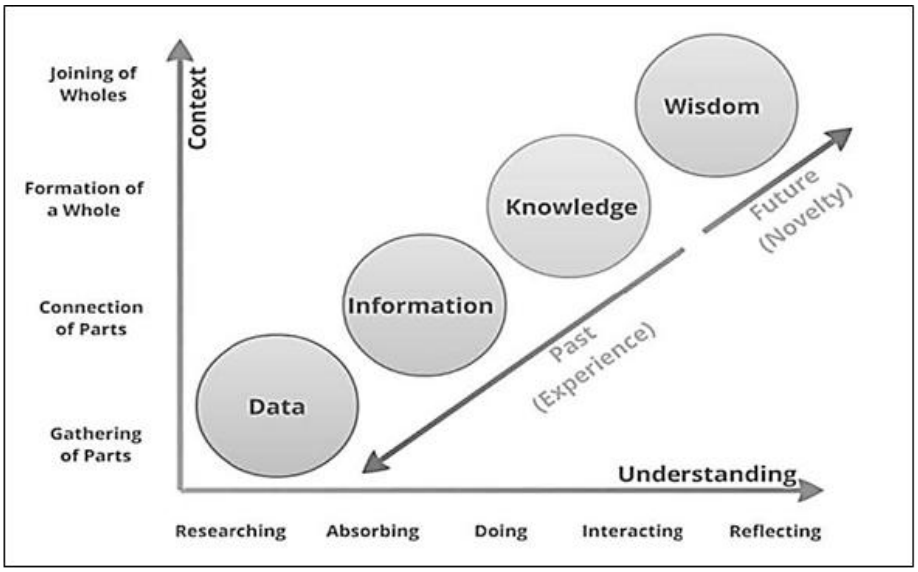
The aim of this article is to highlight the importance and reality of the KM integration in Algerian companies through their knowledge process practices. In order to clarify if the enterprise leaders can really interest in KMS. To conduct this research, a descriptive analysis of an appropriate questionnaire was applied.

## 1. Knowledge characteristics:

The majority of researchers classify the characteristics of knowledge into three types which are data, information and knowledge. Moreover, more researchers add another characteristic which is wisdom. Hence, this model called 'the DIKW[2] pyramid or the DIKW hierarchy' developed by Ackoff (Figure 1).

[2] **DIKW** is referred to as 'Data, Information, Knowledge and Wisdom'.

**Figure 1. DIKW hierarchy Model of Ackoff**




**Source:** Williams, 2014.

Ackoff divides knowledge characteristics into two parts 'Accumulated experiences' from the past and 'Novelty' the starting point for future experiences. The accumulated experiences consist of data, information and knowledge. The data or raw data are independent and comprise facts, numeric characters and symbols without meaning (Williams, 2014). Information is the interpreted cleaned data that represents the useful information in the context, to produce a new meaning (Meier, 2009) and a new meaningful indication of patterns and trends in the data (Meier, 2009; Becerra-Fernandez, Sabherwal, 2015). In this level, it is easy to store, to communicate the new information and to create new support for the strategic decision-making process in the enterprise (Lesca & Lesca, 2014, 2011).

Knowledge is a combination of useful information, employees and organization experiences, context, interpretations and reflections that reproduce inside the individual brain (Gottschalk, 2007).

On the side, the future experience consists of wisdom. Since the context level becomes more personal, the knowledge becomes more difficult to explain. This higher level represents the combined nature with learning, insights and judgment abilities with wisdom (Bergeron, 2003).

In addition, wisdom can represent a deep individual understanding, event and situation that confer the ability of acting to achieve the final objectives by producing an optimum result with less energy and minimum time (Ermine & et al., 2012).

## 2. Knowledge types

Through the development of the actual knowledge and the experience accumulation, the enterprise can create new knowledge. To achieve this level, the enterprise must distinguish between main types of knowledge, the tacit knowledge and explicit knowledge.

**Table 1. The explicit and tacit knowledge characteristics.**

| Tacit Knowledge | Explicit knowledge |
|---|---|
| | - Transfer ''depends on the credibility of the transferer'' and is ''most effectively achieved through face-to-face interaction''. |
| - Products, patents, code, databases, technical drawings, tools, prototypes, audiovisuals, operating procedures. | - Learned through observation and imitation; shared through analogies, metaphors, and stories. |
| - Codified, formal, systematic, reports, manuals, documents | - Experimental, intuitive, communicated through face-to-face collaboration. |
| - Easily codified. | - Primarily transferred through direct interaction between individuals. |
| - Data, instructions, simple factual information, work progress, status. | - Big picture issues, company information/rumors/gossip, needs, new ideas, insight, intuition, problems, concerns, issues. |
| - Handbooks, lectures, databases, textbooks, manuals, newsletters. | - Intuition, rule-of-thumb, gut feeling, personal skill. |
| - Know-what, know-why, know-how, copyrights, patents, trademarks. | - Mental models, beliefs, persuasions, care-why<br>- Transferred through face-to-face interaction, observation, imitation, practice, shared-experiences based on trust. |
| - Academic, know-what, print or electronic media, manuals, mathematical expressions, copyrights, patents. | - Practical, action-oriented, know-how, resembles intuition, mental models, values, beliefs, perceptions, insights, assumptions. Exchanged through ''knowledge fairs, learning communities, study missions, tours, advisory boards, job rotation''. |

**Source:** Holste and Fields, 2010.

According to Nonaka and Takenki, tacit knowledge has an abstract character and more it is personal. Whereas, the explicit knowledge is more formal and it can be processed by computers (Puusa & Eerikäinen, 2010) (Table 1).

In general, explicit knowledge represents all resources that can be expressed in words and numbers. Explicit knowledge can easily and systematically be shared. In contrast to the first type, the tacit knowledge represents all resources that cannot be

expressed and formalized. This type includes intuition, hunches and insights. Thus, it is hard to share.

According to Nonaka and Takenchi (2001), the transformation between those two types represents the heart of KM in the enterprise (Dalkir, 2005). And the real challenge of this transformation is who to support this process within the enterprise (Matta, et al., 2016).

## 3. Knowledge Management System :

### 3.1. Knowledge Management definition:

Actually, knowledge management is one of the main pillars to help the enterprise to reposition and keep its market place (Richards, 2002), this pillar is a vital tool for the organization. In addition, KM has a multidisciplinary nature, it can be a discipline and a field of practice (Dalkir, 2005).

Knowledge is considered an intangible asset and for this reason, the enterprise has to manage it very skillfully (Allameh et al., 2014). Additionally, KM can be defined as a value-generating process from the intangible asset (Uriarte F. A., 2008).

Furthermore, this value can be generated and selected from previous experiences and practices to effectively improve the decision-making process in the future (Jermex M. E.,2005; 2007).

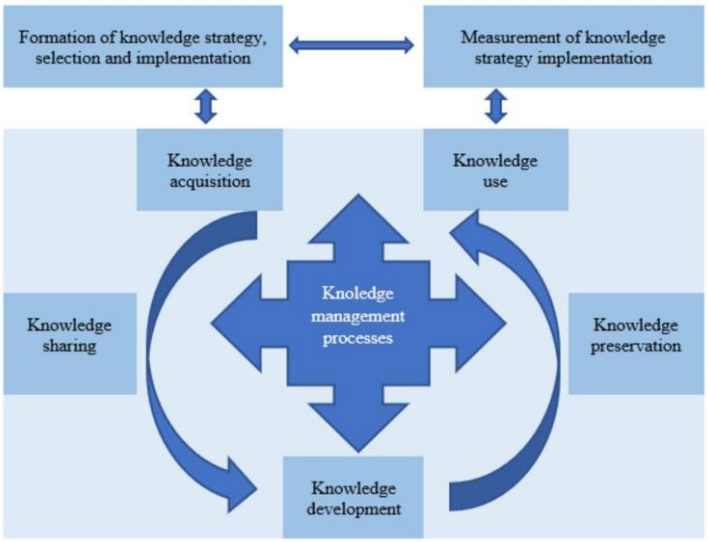
Thus, the knowledge must be defined as a systematic process based on how to identify, acquire, distribute and maintain the knowledge (Uriarte F. A., 2008). Likewise, Bergeron (2003) considers KM as a systematic business optimization strategy for intellectual assets and other information management to gain a competitive advantage.

### 3.2. Knowledge Management process :

To manage KM effectively, the enterprise has to build its own knowledge process system. In the most cases, the knowledge process consists of four practices which are (1) the creation and development (2) the codification and storage (3) the transfer and sharing and (4) the utilization (Zain et al., 2007); to improve the enterprise's effectiveness, we can add an evaluation process to the KM process in order to evaluate the previous knowledge than to develop it into a new one (Lachachi, 2014; 2015).

In contrast to the previous model, Raudeliūnienė (2018) proposes a knowledge development process to improve the KMS in the enterprise and considers the evaluation as the complement step to the knowledge strategy implementation (Figure 2).

**Figure 2. Knowledge management process model of Raudeliūnienė (2018)**




**Source:** Raudeliūnienė, 2018.

## 4. Methods and Materials:

In this study, we adopt a descriptive method to describe and bring out the reality of knowledge management practicing in Algerian enterprises.

To carry out the actual study, we distributed more than 82 questionnaires using two main methods; online and printed questionnaires. These last were followed in several cases by an interview with the respondents. The questionnaires were sent to enterprise leaders and human resource managers.

The questionnaire consists of 37 items represented in three parts and six axes (Table 2). About a quarter of the questionnaires were retrieved which represents a total ratio of 41%. The variables were measured using dichotomy coding. The coding consists of two values (yes or no).

**Table 2. The parts and axes of the questionnaire.**

| Parts | Axes |
|---|---|
| **Part 1:** Enterprise Identification | **Axis 01:** Enterprise Identification and general information. |
| **Part 2:** Knowledge Management within the enterprise | **Axis 02:** Conception of knowledge within the enterprise.<br>**Axis 03:** Creation of knowledge.<br>**Axis 04**: The storage and sharing of knowledge<br>**Axis 05:** The use of knowledge. |
| **Part 3:** Knowledge Management and the TIC | **Axis 06:** The role of ICT in the knowledge process. |

**Source**: proposed by the authors.

The reliability of our data set was measured by using Alpha Cronbach's Coefficient method. The result shows that the items are highly reliable (81%).

To archive more information about practicing knowledge management within the enterprise we adopt a simple method based on dividing the knowledge management process into five phases (Creation, Sharing, development, Use and Storage) according to Raudeliūnienė (2018) in order to focus on the activities of each process (Figure3).

## 5. Results and Discussion:

The nature of the enterprises in our sampling is represented in two categories, the private sector which represents 37% and 63% for the public sector. The size is represented in three categories (small, medium and big enterprises) according to the European Commission report. The data show that the small enterprises dominate in our sample with 43.5% and 31.25% for the big enterprises, the medium enterprise represents 25% in this sample.

The nature of economic activity in this study is represented in three types (Service, Commercial, Manufacturing). The manufacturing sector represents 82%, the service sector represents 12% and the commercial sector represents 6%.

### 5.1. The knowledge process practices analysis:

#### 5.1.1. Knowledge creation and acquisition:

The results show that all enterprises are able to collect the necessary information but only 88% are able to process this information.

In terms of information nature, 88% of Algerians enterprises can create their own knowledge from the new collected information and old one. On another hand, only 75% of enterprises can at the same time create knowledge from a new and old information. More clearly, we have 75% of enterprises that can create knowledge from only new information and 63% of enterprises can create knowledge from an only old information. Consequently, at least there are 12% of enterprises cannot process the information or either creating new knowledge.

In addition, 88% of the employees participate in knowledge creation but only 69% of them are rewarded (Table 3).

**Table 3. Employees rewarding participation in knowledge creation.**

| | | employees who (or if) create knowledge are rewarded | | Total |
|---|---|---|---|---|
| | | No (%) | Yes (%) | (%) |
| Employees play a role in knowledge creation | No (%) | 6 | 6 | 12 |
| | Yes (%) | 19 | 69 | 88 |
| Total (%) | | 25 | 75 | 100 |

**Source:** proposed by the authors based on SPSS output.

#### 5.1.2. Knowledge preservation, sharing and use:

About 56% of the enterprises use the paper to store information and knowledge while 75% use electronic supports. Only 69% of the enterprises integrate the knowledge in their management system and most of them consider the training or inter learning one of the best methods to store the knowledge.

And from another side, only 38% of enterprises use manuals (textbooks) in the sharing process. According to some of the leaders, the education lower level of the employees is the main factor due to not using manuals. This situation imposes on managers to replace the manuals by the direct and indirect verbal instructions in order to solve this problem. Knowledge sharing can positively impact the innovation capability in the firm (Mendoza-Silva, 2021).

About 87% of enterprises use the accumulated knowledge to manage the new projects but only 68% of them consider this knowledge as strategic resources.

#### 5.1.3. ICT and knowledge development:

In our research, 50% of the managers set up an information system in order to treat and enhance knowledge management within the organization. Besides, 63% of them consider the internet as a useful support to communicate and manage different documents especially with their partners.

However, only 38% of them use the social network to collect the necessary information. In spite, we found that 69% of enterprise's leaders are ready to adopt new technologies as well as mobile applications, GPS… etc. in aim to help in knowledge development and utilization.

On the other hand, the majority of managers argue that knowledge management helps to improve the organization's performance and it can boost productivity and creativity among the employees.

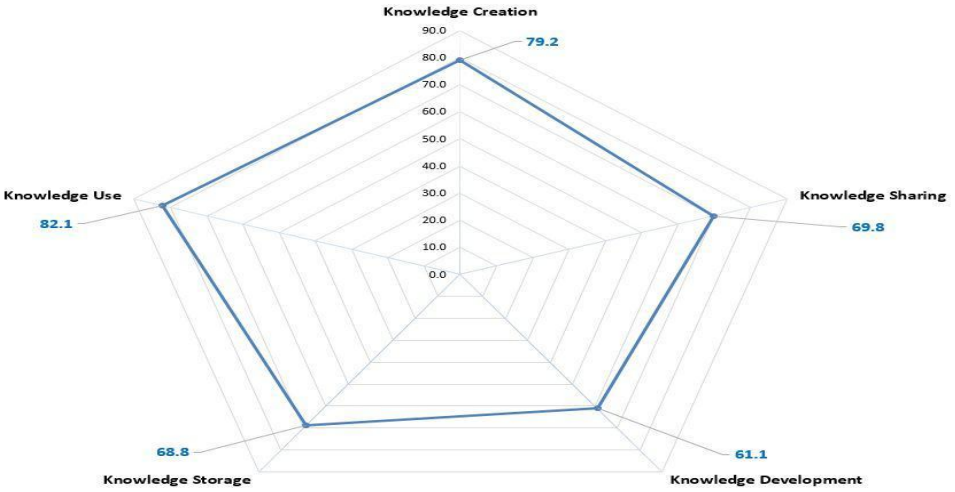
### 5.2. The knowledge management system analysis:

#### 5.2.1. The KM process in the Algerian enterprises:

The creation and the use processes have the highest level of the positive responses in the knowledge process. The creation process represents 79.2% in this case and the knowledge use process represents 82.1%. In the second side, the sharing and storage processes represent 69.8% and 68.8% respectively. Moreover, the sharing process and development process can help the enterprise to formalize the knowledge and distribute it easily and effectively within the enterprise (Figure 4).

In contrast, we note that the knowledge development process represents the lowest level about 61.1%. Generally, it is acceptable but it needs more improvement.

**Figure 4. The global average of knowledge process (%).**



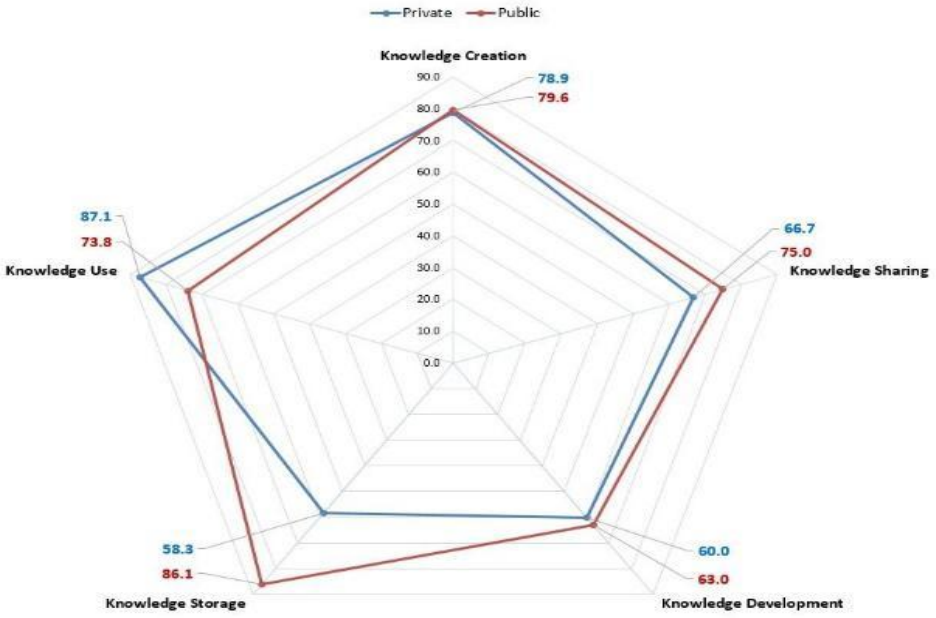

**Source:** proposed by the authors based on the Excel output.

### 5.2.2. The knowledge process in the private and public enterprise:

The creation process and the development process in the private and public sectors have approximately the same ratio. On the contrary, it is remarkable that the storage process in the public sector has a larger ratio than the private sector. The gap between the two sectors is large, it represents about 28%. In addition, the gap in knowledge sharing represents a soft difference but it has a considerable difference in the knowledge use process with an advantage point for the private sector (figure 5).

To sum up, we found that the global knowledge management process in the public sector represents 75.5% while the private sector has only 70.2%. In general, these results are very close and good.

**Figure 5. The knowledge process in private and public enterprise (%).**




**Source:** proposed by the authors based on the Excel output.

### 5.2.3. The knowledge process through the size of the enterprise:

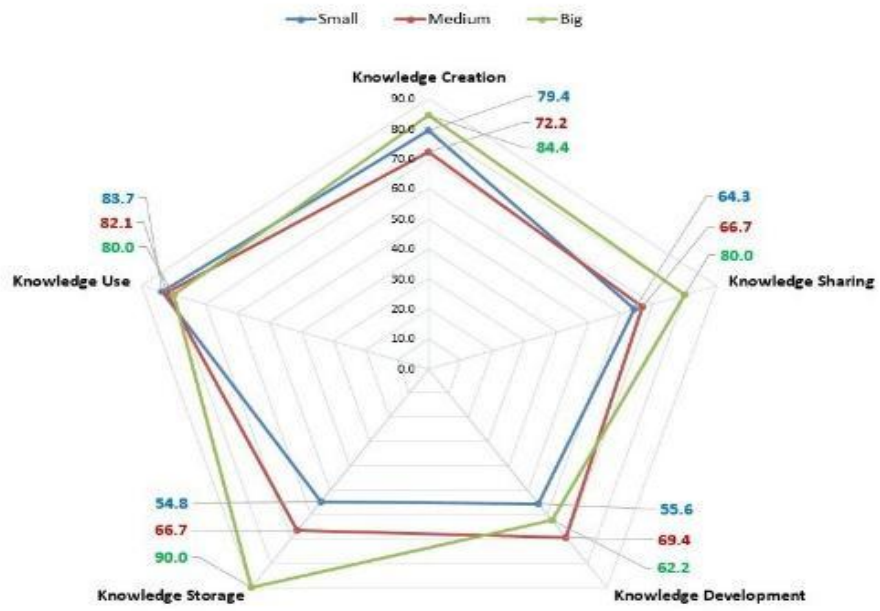
The following figure 6 shows that the size of enterprise significantly influences the knowledge management process integration within the enterprise especially in the big enterprises. These last have a positive average of 79.3%. More closely, the medium enterprises have an average of 71.4% but the small enterprises represent only 67.5% which is the lowest ratio.

In particular, the storage process in big enterprises represents 90% of the positive values. However, the medium and the small enterprises represent 66.7% and 54.8% respectively. Therefore, the gap in this level is very large.

All of the creation, sharing and development processes have a small varying difference between them. Whereas, the knowledge use process is approximately the same.

Similarly, to the previous results in figures 1 and 2, the knowledge development process represents the weak link in our knowledge management process model.

**Figure 6. The knowledge process in the small, medium and big enterprise (%).**




**The source:** proposed by the authors based on the Excel output.

## Conclusion:

The main objective of our research is to authenticate the reality of knowledge management practice in Algerian enterprises.

For this reason, the actual paper has clearly shown through the knowledge practices that the integration of KM in the management system plays an important role to improve performance and to enhance the management system in general. The findings show that knowledge integration in the enterprise system in our case represents an average of 72.2%.

From another perspective, the KM process in big enterprises has a significant advantage against the other types. The available evidence of the findings seems to suggest that big enterprises have a better financial capacity to integrate the knowledge management in their management system.

Besides, the previous section has shown that KM has a varying difference in its processes especially with the development process which needs more effort to improve its practices and enhance its role in the global process. Future studies should explore the relationships between KMS and innovation in Algerian enterprises.

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